Bits

1 2 3 4	5 6 7 8	9 10 11 12 13 14 15 16	17 18 19	20 21 22 23 24 25 26 27 28 29 30 31 32
Version	Header Length	Type of Service		Total Packet Length
Sequence Number			Flags	Fragment Offset
Time to Live		Protocol		Header Checksum
Switching, Path and Channel Identifiers				
Packet Type, QoS, Security and Network Management Identifiers and Values				
Options (if any)				
Data (if any)				

Figure 1. Representative Description of the IPv4 Header for VIPS

Version	Header Length	Type of Service (TOS)		Total Packet Length	
Sequence Number			Flags	Fragment Offset	
Time to Live (TTL)		Protocol (0x800)		Header Checksum	
32-bit Virtual Connection Identifier (VCID)					
5-bit Packet Marker	3-bit Version	2-bit Pkt #	6-bit Quality of Service (QoS)	Reserved for security network management, etc.	
IP Options (if any)					
Data (if any)					

Bits (19)
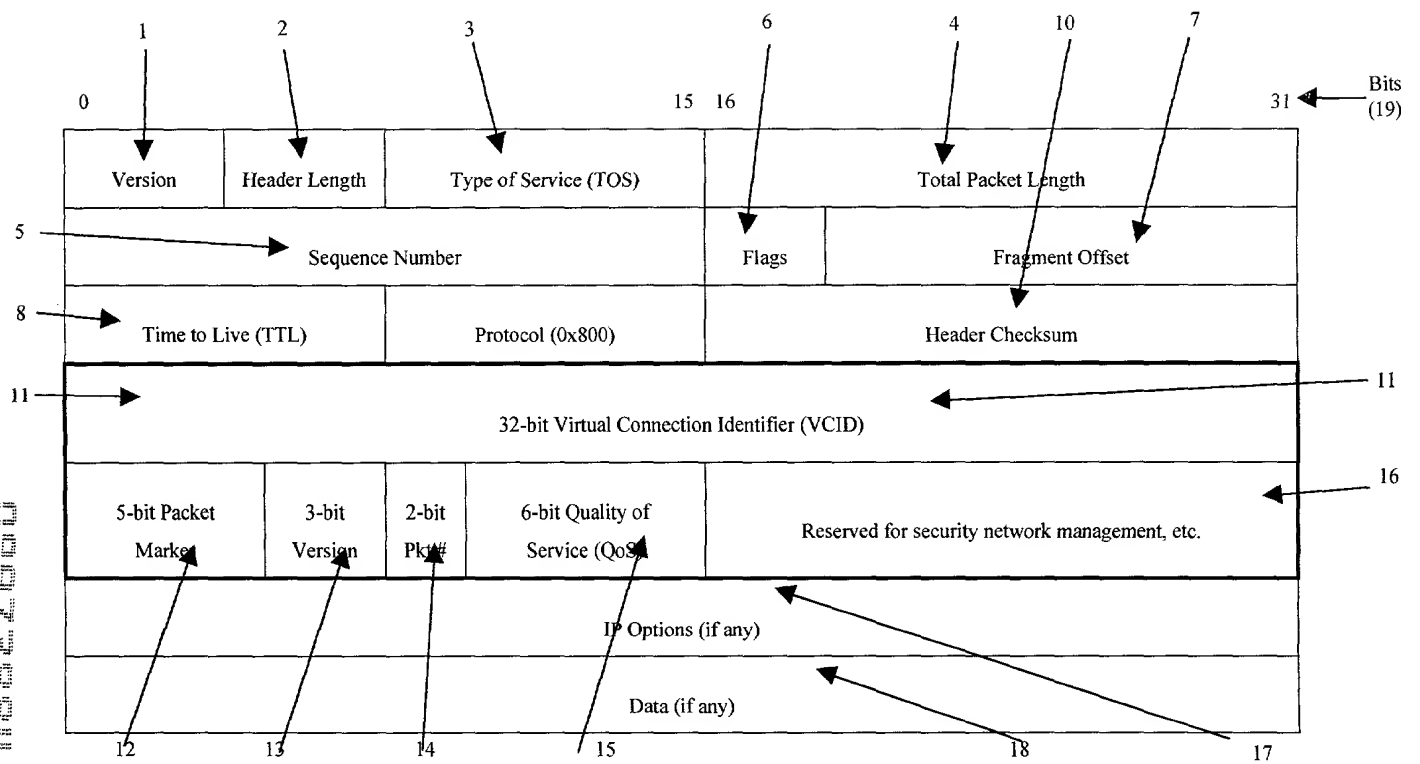
Figure 2. Representative Configuration of a VIPS Packet
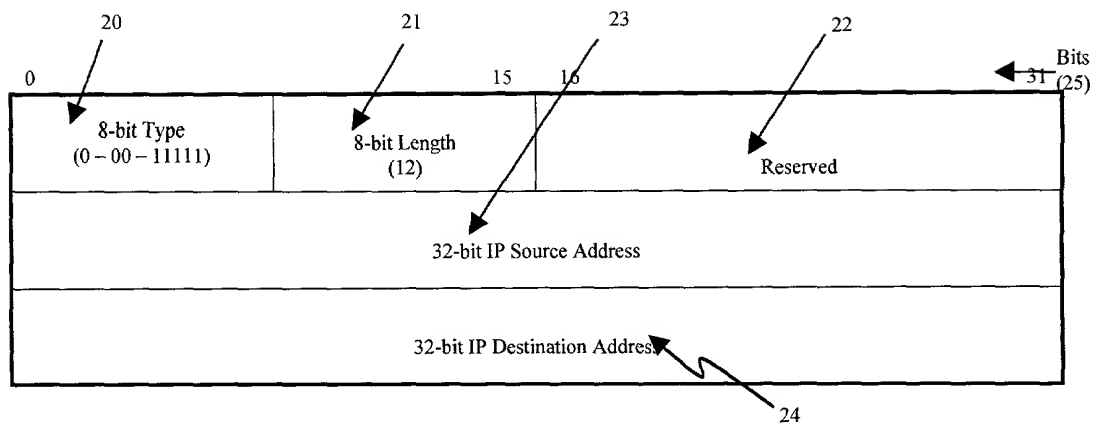
Figure 3. Representative First or Lead Packet IP Option
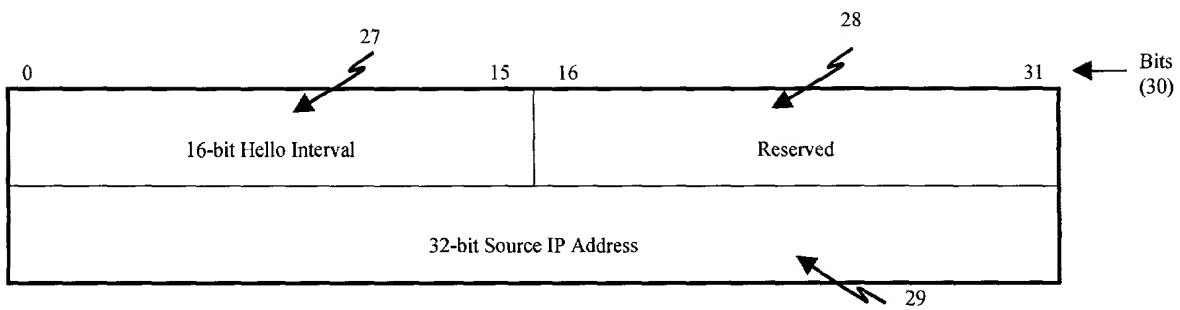
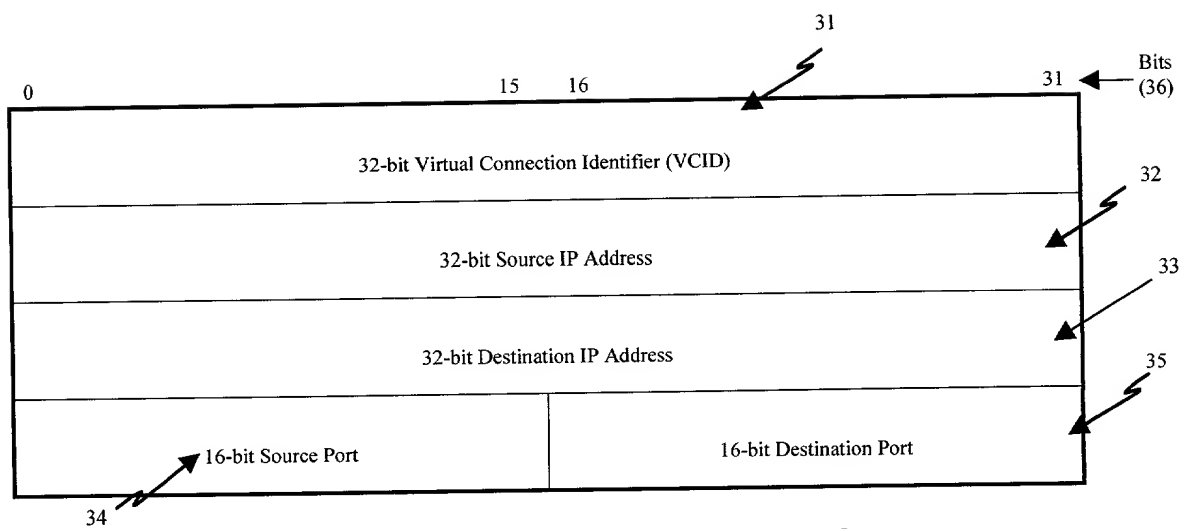**Figure 4. Representative Hello Packet Payload**

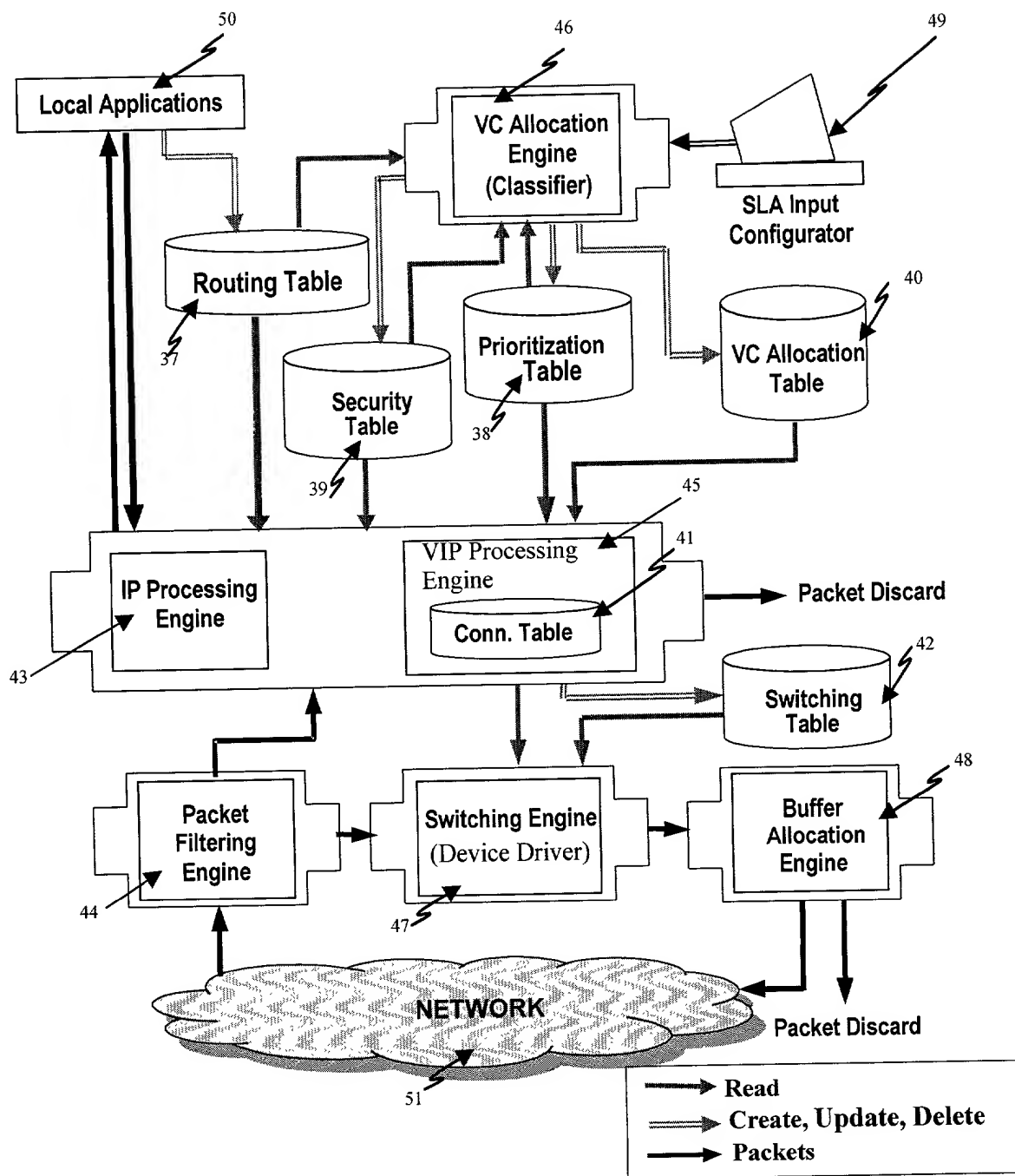**Figure 5. Representative CACK Packet Payload**

Figure 6. Representative Functional Details

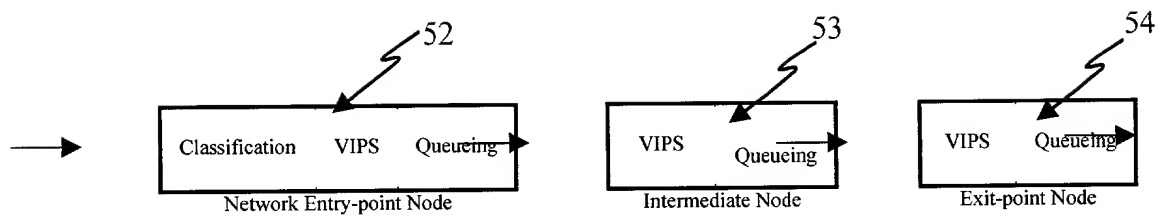**Figure 7. Representative Packet Queuing Concepts**

Classification VIPS Queueing
Network Entry-point Node 52

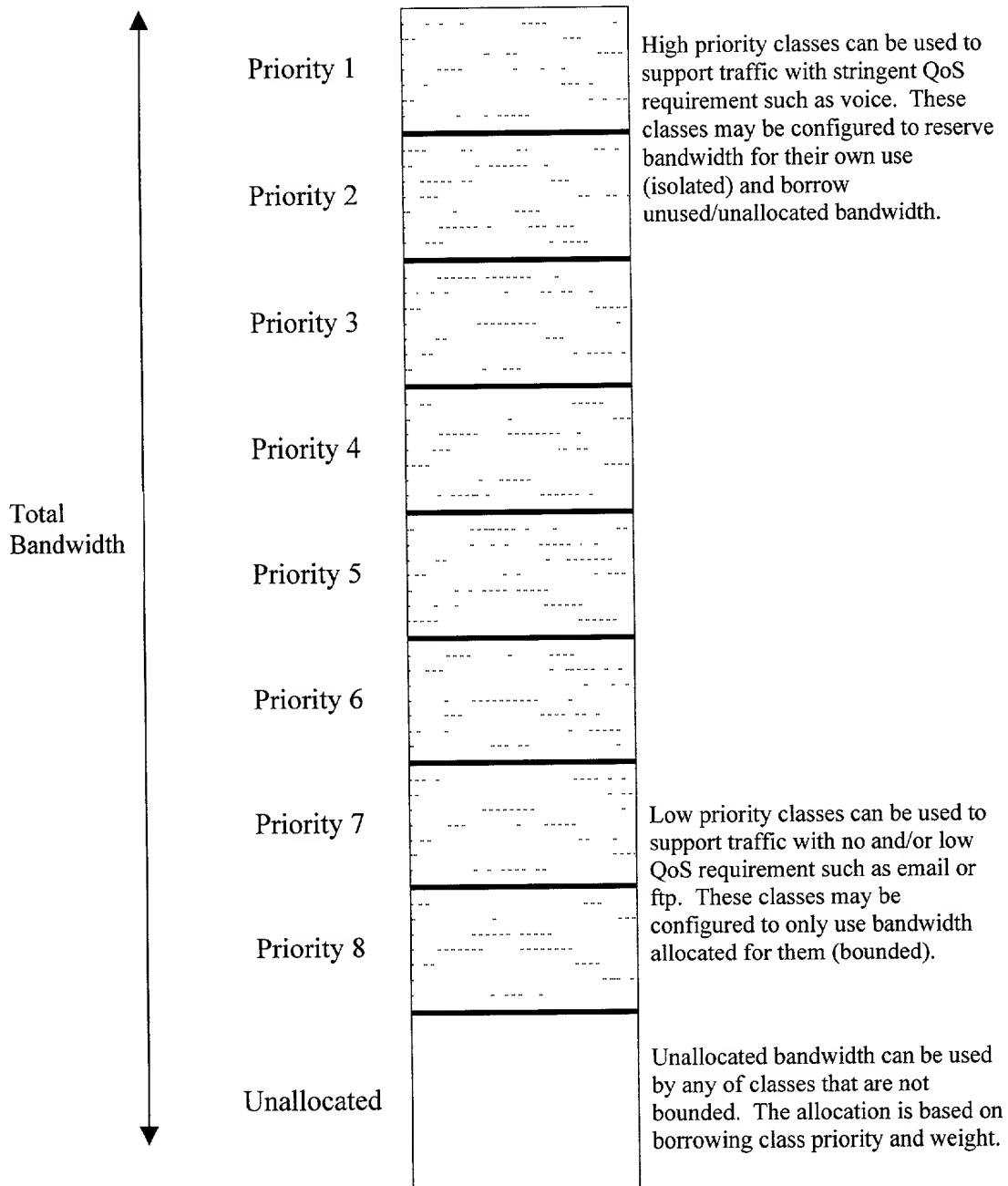VIPS Queueing
Intermediate Node 53

VIPS Queueing
Exit-point Node 54

Figure 8. Representative Distribution of Classes

The figure shows a vertical bar labeled "Total Bandwidth" divided into sections:

- Priority 1
- Priority 2
- Priority 3
- Priority 4
- Priority 5
- Priority 6
- Priority 7
- Priority 8
- Unallocated

Annotations:

High priority classes can be used to support traffic with stringent QoS requirement such as voice. These classes may be configured to reserve bandwidth for their own use (isolated) and borrow unused/unallocated bandwidth.

Low priority classes can be used to support traffic with no and/or low QoS requirement such as email or ftp. These classes may be configured to only use bandwidth allocated for them (bounded).

Unallocated bandwidth can be used by any of classes that are not bounded. The allocation is based on borrowing class priority and weight.